# A meta-analysis of potential prognostic biomarkers in coronavirus disease 2019 (2019-nCoV)

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# **APPENDIX**

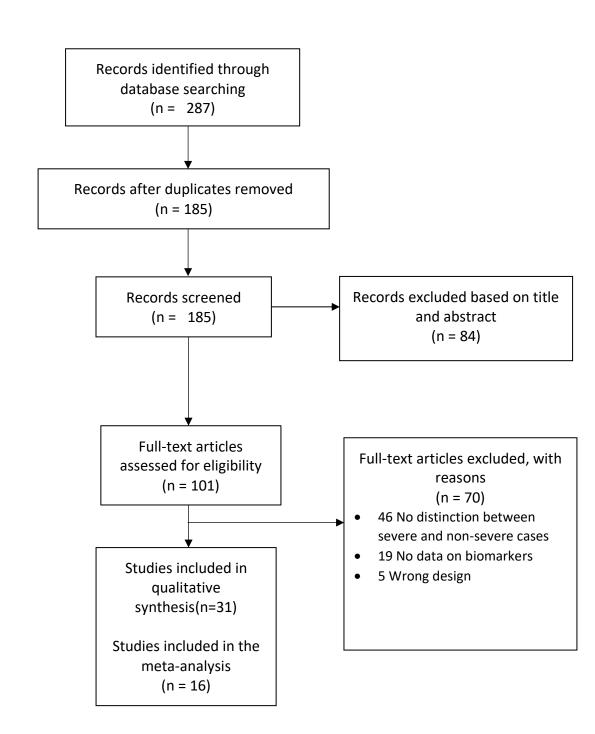
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# Supplementary table 1. Search strategy in PubMed and EMBASE

Search	Search terms
#1	COVID [tiab] OR "novel coronavirus"[tiab]
#2	Clinical features[tiab] OR clinical profil[tiab]
#3	blood disorders[MeSH Terms]
#4	#1 AND #2
#5	#1 AND #3
#6	#4 OR #5
Date: 18 April 20	020, restriction: 2019 and 2020

#### Supplementary table 2.Search strategy in EMBASE

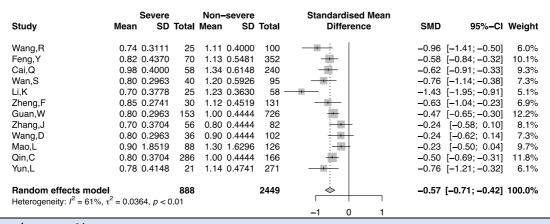
Search	Search terms						
#1	covid OR 'novel coronavirus'						
#2	clinical OR features OR profil						
#3	blood AND disorders						
#4	#1 AND #2						
#5	#1 AND #3						
#6 #4 OR #5							
Date: 18 April 2020,	Date: 18 April 2020, restriction: 2019 and 2020						



I. Forest plot of studies reporting mean and standard deviation (or interquartile range) of biomarkers in severe and non-severe groups

#### Meta-analysis of routine blood biomarkers

#### Lymphocytes count



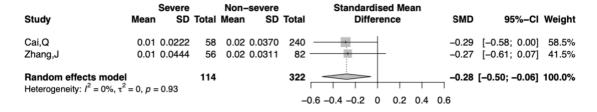
#### Lymphocytes %

Study	Mean	Severe SD	Total	Non Mean	-severe SD	Total	Standardised Mean Difference	SMD	95%-CI Weight
Li,K Zhang,J Qin,C	13.20 12.70 14.10	10.5926	56		8.7200 11.7778 12.7407	58 82 166	*	-0.64	[-1.81; -0.79] 22.3% [-0.99; -0.29] 32.6% [-0.88; -0.48] 45.1%
Random effects model Heterogeneity: $I^2 = 62\%$ , $\tau$	-	66, <i>p</i> = 0.0	<b>367</b> 07			306	-1.5 -1 -0.5 0 0.5 1 1.5	-0.81	[-1.12; -0.49] 100.0%

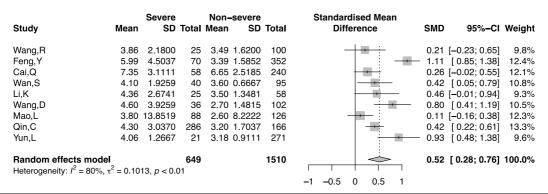
#### **Thrombocytes**

		Severe		No	n-severe		Standardised Mean			
Study	Mean	SD	Total	Mean	SD	Total	Difference	SMD	95%-CI	Weight
Wang,R	163.40	60.2600	25	169.50	51.8519	100		-0.11	[-0.55; 0.33]	11.4%
Feng,Y	181.00	82.2222	70	185.00	68.1481	352	<del>: •</del>	-0.06	[-0.31; 0.20]	16.2%
Wan,S	147.00	70.3704	40	170.00	72.5926	95	-	-0.32	[-0.69; 0.05]	13.1%
Zheng,F	160.00	60.0000	30	171.00	62.2222	131		-0.18	[-0.57; 0.22]	12.4%
Guan,W	137.50	59.6296	156	172.00	54.0741	713		-0.63	[-0.80; -0.45]	18.4%
Wang,D	142.00	61.4815	36	165.00	46.6667	102		-0.45	[-0.83, -0.07]	12.7%
Mao,L	204.50	413.3333	88	219.00	400.7407	126	+	-0.04	[-0.31; 0.24]	15.8%
Random effects model Heterogeneity: $I^2 = 72\%$ , $\tau^2$	= 0.059	9, <i>p</i> < 0.01	445			1619		-0.26	[-0.48; -0.04]	100.0%
							-0.5 0 0.5			

#### Eosinophils



#### Neutrophils



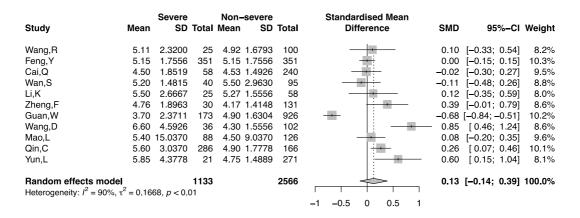
#### Haemoglobin

Study	Mean	Severe SD		Nor Mean	-severe SD	Total	Standardised Mean Difference	SMD	95%-Cl Weight
Wang,R	136.68	16.9200	25	140.86	15.2700	100		-0.27	[-0.71; 0.17] 15.2%
Feng,Y	131.00	18.5185	70	133.00	17.0370	352		-0.12	[-0.37; 0.14] 44.7%
Wan,S	130.00	17.0370	40	134.00	17.0370	95		-0.23	[-0.60; 0.14] 21.5%
Zheng,F	126.00	17.0370	30	131.00	14.8148	131		-0.33	[-0.72; 0.07] 18.6%
Random effects model Heterogeneity: $I^2 = 0\%$ , $\tau^2$		า 82	165			678		-0.20	[-0.37; -0.03] 100.0%
riciclogeneity. 7 = 070, t	– 0, <i>p</i> – (	3.02					-0.6 -0.2 0 0.2 0.4 0.6		

#### Monocytes

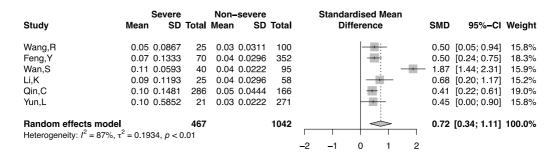
	Severe	Non-severe		Standardised Mean		
Study	Mean SD	Total Mean SD	Total	Difference	SMD	95%-CI Weight
Wang,R	0.30 0.2111	25 0.36 0.1852	100		-0.31 [-0	0.75; 0.13] 14.3%
Li,K	0.34 0.2667	25 0.42 0.1778	58 —		-0.38 [-0	0.85; 0.09] 12.5%
Wang,D	0.40 0.1481	36 0.40 0.1481	102		0.00 [-0	0.38; 0.38] 18.6%
Qin,C	0.40 0.1481	286 0.40 0.1481	166	-	0.00 [-0	0.19; 0.19] 54.6%
Random effects mode Heterogeneity: $I^2 = 14\%$ ,		<b>372</b> 1.32	426		-0.09 [-0	0.27; 0.08] 100.0%
, ,	, ,			-0.5 0 0.5		

#### White Blood Cells



#### Meta-analysis of Inflammation biomarkers

#### Procalcitonin



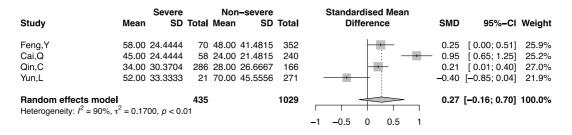
#### C-reactive protein

Study	Severe Mean SD			Standardised Mean Difference	SMD	95%-CI \	Weight
Wang,R Feng,Y Cai,Q Wan,S Li,K Zheng,F Zhang,J Mao,L Qin,C	56.26 47.8800 83.40 72.5926 32.23 29.4667 91.00 61.9259 89.20 64.2667 52.20 34.2963 47.60 49.2593 37.10 156.9630 57.90 60.9630	63 12.00 24.5926 58 8.18 13.4963 40 7.70 21.6296 25 9.59 20.6074 30 15.40 14.1481 55 28.70 31.5556 88 9.40 93.0370	307 3 240 5 95 4 58 131 6 81 0 126	# # # #	1.91 [ 1.35 [ 1.	1.26; 2.24] 1.61; 2.22] 1.05; 1.66] 1.72; 2.62] 1.46; 2.59] 1.44; 2.33] 0.13; 0.82] 0.05; 0.50] 0.28; 0.67]	10.7% 11.4% 11.4% 10.9% 10.4% 10.9% 11.3% 11.5% 11.7%
Heterogeneity: $I^2 = 95\%$ , $\tau$				-2 -1 0 1 2			001070

#### Interleukin-6

Study	Severe Mean SD		e O Total	Standardised Mean Difference	SMD	95%-CI Weight
Wang,R Cai,Q Qin,C	39.80 27.2963 26.95 25.2667 25.20 33.2593	58 8.51 9.370	4 240	*	- 1.32	[0.68; 1.60] 31.0% [1.02; 1.63] 33.7% [0.19; 0.57] 35.2%
Random effects mode Heterogeneity: $I^2 = 93\%$ ,		<b>369</b> 01	<b>506</b> ┌	5 -1 -0.5 0 0.5 1 1.		[0.25; 1.61] 100.0%

#### Erythrocytes sedimentation rate



#### Meta-analysis of biochemical biomarkers

#### **ALAT**

Study Mean		on–severe ı SD Total	Standardised Mean Difference	SMD 95%-CI Weight
Cai,Qi       67.00         Wang,R       25.00         Feng,Y       35.00         Cai,Q       26.85         Wan,S       26.60         Zheng,F       23.90         Zhou,F       40.00         Wang,D       35.00         Mao,L       32.50         Yun,L       32.00	12.9630 25 24.00 20.7407 70 23.00 15.4074 58 20.00 13.9259 40 21.77 13.1111 30 19.30 20.0000 54 27.00 28.1481 36 23.00 1428.1481 88 23.00	1 18.3333 100 1 17.0370 352 1 11.2963 240 1 16.3704 95 2 2.3704 131 1 18.5185 135 1 15.5556 102 1 188.8889 126		0.77 [0.52; 1.03] 11.8% 0.06 [-0.38; 0.50] 8.2% 0.68 [0.42; 0.94] 11.7% 0.56 [0.27; 0.85] 11.1% 0.31 [-0.06; 0.68] 9.4% 0.76 [0.36; 1.17] 8.8% 0.68 [0.36; 1.01] 10.4% 0.61 [0.22; 1.00] 9.2% 0.01 [-0.26; 0.28] 11.4% - 0.80 [0.35; 1.25] 8.1%
Random effects model Heterogeneity: $I^2 = 68\%$ , $\tau^2 = 0.05$	<b>507</b> 597, <i>p</i> < 0.01	1785		0.53 [ 0.34; 0.71] 100.0%
			-1 -0.5 0 0.5 1	

# ASAT

Study	Severe Mean SD		e D Total	Standardised Mean Difference	SMD	95%-CI Weight
Cai,Qi Wang,R Feng,Y Cai,Q Wan,S Zheng,F Wang,D Mao,L Yun,L  Random effects mode Heterogeneity: $l^2 = 91\%$ ,		25 26.00 10.370 70 25.00 11.111 58 26.00 9.629 40 22.40 10.074 30 23.40 7.259 36 29.00 12.592 88 23.00 174.074 21 23.00 8.888	4 100 1 352 6 240 1 95 3 131 6 102 1 126		0.29 [- 1.12 [ 0.92 [ 0.99 [ 0.82 [ 1.23 [ 0.00 [- - 2.36 [	0.78; 1.31] 11.7% -0.15; 0.73] 10.6% 0.85; 1.39] 11.7% 0.62; 1.21] 11.5% 0.60; 1.38] 11.0% 0.42; 1.23] 10.8% 0.83; 1.64] 10.8% 0.27; 0.28] 11.6% 1.87; 2.84] 10.3% 0.58; 1.34] 100.0%
Trotorogonoxy: 7 = 0176;	υ = 0.0000, ρ ( 0.0 )			<del>-</del> 2 -1 0 1 2		

# Albumin

Study	Severe Mean SD Tot	Non–severe al Mean SD 1	Standardised Mean Total Difference	SMD 95%-CI Weight
Feng,Y	32.25 4.7926	70 39.14 5.5926	352	-1.26 [-1.53; -0.99] 26.1%
Wan,S	36.00 4.0741	40 49.90 4.5926	95 —	-3.11 [-3.64; -2.58] 23.7%
Zhou,F	29.10 3.5556	54 33.60 4.2963	137	-1.09 [-1.43; -0.76] 25.6%
Yun,L	35.80 4.6000	21 40.90 3.8000	271	<b>-1.32</b> [ <b>-1.77</b> ; <b>-0.86</b> ] 24.5%
Random effects mode Heterogeneity: $I^2 = 93\%$ ,		35	855	-1.67 [-2.40; -0.94] 100.0%
rieterogeneity. 7 = 3076,	= 0.3033, p < 0.01		-3 -2 -1 0 1 2 3	

# CK

		Severe	No	n-severe	Standardised Mean		
Study	Mean	SD To	tal Mean	SD Total	Difference	SMD	95%-CI Weight
Feng,Y	93.00 1	43.7037	70 80.00	61.4815 352	<del></del> :	0.16 [-	-0.10; 0.42] 15.2%
Cai,Q	87.00	88.0741	58 64.50	34.8148 240	<del>   </del>	0.45 [	0.16; 0.74] 14.9%
Wan,S	82.00	66.5926	40 57.00	37.0370 95	- <del></del>	0.52 [	0.15; 0.90] 14.1%
Zheng,F	100.30 2	249.8519	30 68.70	50.4444 131	+	0.27 [-	0.13; 0.67] 13.8%
Wang,D	102.00 1	40.7407	36 87.00	49.6296 102	<del>  • •</del>	0.18 [-	0.20; 0.56] 14.0%
Mao,L	83.00 90	042.3704	88 59.00	919.2593 126		-] 00.0	0.27; 0.28] 15.0%
Yun,Ĺ	227.00 2	236.2963	21 77.50	45.7778 271	T   -	1.96 [	1.49; 2.43] 13.0%
Random effects mo Heterogeneity: $I^2 = 89^{\circ}$			43	1317		0.48 [	0.10; 0.87] 100.0%
Helelogeneity. I = 69	76, t = 0.2342, p	0 < 0.01			-2 -1 0 1 2	2	

# CK-MB

Study	Mean	Severe SD	Total	Non- Mean	severe SD	Total	Standardised Mean Difference	SMD	95% <b>–</b> CI	Weight
Feng,Y	15.50	8.3333	70	12.75	4.3556	352	<del>-    </del>	0.53	[0.27; 0.78]	34.5%
Cai,Q	1.13	0.8593	58	0.76	0.3556	240	-	0.75	[0.45; 1.04]	29.6%
Wang,D	18.00	17.0370	36	13.00	2.9630	102		0.55	[0.17; 0.94]	20.1%
Yun,L	17.10	10.4444	21	12.50	3.6296	271	-	1.03	[0.58; 1.48]	15.7%
Random effects model Heterogeneity: $I^2 = 30\%$ , $\tau$		22, p = 0.	<b>185</b> 23			965	<b>*</b>	0.68	[0.48; 0.87]	100.0%
		•					-1 -0.5 0 0.5 1			

# Troponin

Study	Severe Mean SD	· N Total Mo	lon–severe ean SD Total	Standardised Mean Difference	SMD	95%-CI Weight
Wang,D Yun,L	11.00 15.4074 0.04 0.0459		5.10 5.7037 102 0.02 0.0207 271			[0.25; 1.02] 57.3% [0.36; 1.26] 42.7%
Random effects model Heterogeneity: $I^2 = 0\%$ , $\tau^2$		57	373	-1 -0.5 0 0.5 1	0.71 [	0.42; 1.00] 100.0%

# Creatinemia

	Sever	e N	on-severe	Standardised Mean		
Study	Mean S	D Total Mear	SD Total	Difference	SMD	95%-CI Weight
Wang,R	67.32 16.810	0 25 64.50	15.9970 100	<del>-   •</del>	0.17 [-	0.27; 0.61] 9.6%
Feng,Y	67.95 19.296	3 70 65.46	352 17.5556	<del>-   •   •   •   •   •   •   •   •   •   </del>	0.14 [-	0.12; 0.40] 16.5%
Cai,Q	72.00 31.851	9 58 61.00	17.7778 240		- 0.52 [	0.23; 0.81] 14.9%
Wan,S	63.50 16.888	9 40 66.00	) 17.7778 95		-0.14 [-	0.51; 0.23] 11.7%
Zheng,F	47.50 18.518	5 30 48.30	) 14.1481 131		-0.05 [-	0.45; 0.34] 10.8%
Wang,D	80.00 29.629	6 36 71.00	19.2593 102	-	0.40 [	0.02; 0.78] 11.3%
Mao,L	71.60 6962.296	3 88 65.60	140.5185 126	-	0.00 [-	0.27; 0.27] 15.7%
Yun,L	72.30 43.851	9 21 63.00	18.2222 271	-	— 0.44 [	0.00; 0.89] 9.4%
Random effects mode Heterogeneity: $I^2 = 49\%$ ,	-	<b>368</b> 6	1417		0.18 [	0.01; 0.35] 100.0%
<b>gy</b>	,	-		<b>-</b> 0.5 0 0.5		

# Blood urea nitrogen

		Severe			severe		Standardised Mean		
Study	Mean	SD	Total	Mean	SD	Total	Difference	SMD	95%-CI Weight
Wang,R	4.61	2.2800	25	3.90	1.2000	100		0.48	[ 0.03; 0.92] 17.6%
Feng,Y	5.65	2.5407	70	4.60	1.4741	352	-	0.62	[ 0.36; 0.88] 21.5%
Cai,Q	5.20	1.8889	58	3.84	1.2074	240		0.99	[ 0.69; 1.29] 20.8%
Wang,D	5.90	3.9259	36	4.00	1.4815	102	-	0.80	[ 0 41; 1 19] 18.7%
Mao,L	4.60	34.5185	88	3.80	8.9630	126	-	0.03	[-0.24; 0.31] 21.3%
Random effects model Heterogeneity: $I^2 = 83\%$ , $\tau$		21, <i>p</i> < 0.0	<b>277</b> 01			920		0.58	[ 0.23; 0.93] 100.0%
							<b>-1 -</b> 0.5 0 0.5 1		

# Total bilirubin

Study	Mean	Severe SD	Total	Non- Mean	severe SD	Total	Standardised Mean Difference	SMD	95%-CI Weight
Cai,Qi	22.00	7.4074	85	19.00	9.6296	233	-	0.33 [	0.08; 0.58] 20.5%
Wang,R	10.40	8.0741	25	9.25	5.5741	100		0.19 [-	-0.25; 0.62] 9.1%
Feng,Y	12.20	6.0000	70	9.50	4.4444	352	-	0.57 [	0.31; 0.83] 19.6%
Cai,Q	11.25	7.3333	58	10.90	5.5556	240	<del>- :</del>	0.06 [-	-0.23; 0.35] 17.2%
Wan,S	9.80	5.7778	40	8.60	6.2222	95		0.20 [-	-0.17; 0.57] 11.9%
Zheng,F	12.70	5.7037	30	10.70	5.2741	131	-	0.37 [-	-0.03; 0.77] 10.6%
Wang,D	11.50	6.6667	36	9.30	3.4074	102		0.49 [	0.10; 0.87] 11.2%
Random effects model Heterogeneity: $I^2 = 28\%$ , $\tau^2$	<sup>2</sup> = 0.01	06, <i>p</i> = 0	<b>344</b> 0.22			1253		0.32 [	0.18; 0.47] 100.0%
							<b>-</b> 0.5 0 0.5		

# LDH

	Sever	e N	on-severe	Standardised Mean	
Study	Mean SI	) Total Mear	n SD Total	Difference	SMD 95%-CI Weight
Feng,Y	378.00 183.703	7 70 236.00	90.3704 352	-	1.27 [ 1.00; 1.55] 14.7%
Cai,Q	387.00 273.333	3 58 216.00	132.5926 240	-	1.01 [0.71; 1.31] 14.6%
Wan,S	309.00 114.444	40 212.00	58.8889 95	-	1.22 [ 0.82; 1.61] 14.2%
Zheng,F	226.20 90.074	1 30 162.00	55.4074 131		1.01 [ 0.60; 1.42] 14.2%
Wang,D	435.00 217.7778	36 212.00	88.8889 102	=	1.65 [1.22; 2.08] 14.1%
Mao,L	302.00 650.222	2 88 215.00	670.7407 126	=	0.13 [-0.14; 0.40] 14.7%
Yun,L	454.00 138.518	5 21 224.00	58.8889 271		3.40 [ 2.88; 3.92] 13.6%
Random effects mod Heterogeneity: $I^2 = 95\%$ ,		<b>343</b>	1317		1.36 [ 0.75; 1.98] 100.0%
				<b>-</b> 2 0 2	

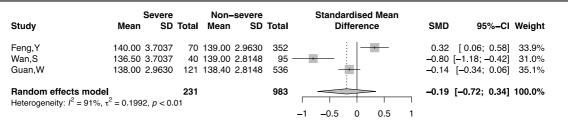
## Myoglobin

	Sever	e Non-	severe	Standardised Mean		
Study	Mean SI	) Total Mean	SD Total	Difference	SMD	95%-CI Weight
Feng,Y	52.05 57.651	70 11.70 2	27.0741 352	+	1.18 [	0.91; 1.45] 38.2%
Cai,Q	67.90 49.592	58 33.52 1	2.2741 240	÷ •	- 1.41 [	1.10; 1.71] 35.4%
Yun,L	32.10 133.037	21 5.90	7.3333 271	-	0.73 [	0.29; 1.18] 26.4%
Random effects mode Heterogeneity: $I^2 = 66\%$ ,	<del>-</del> .	<b>149</b>	<b>863</b>		1.14 [	0.81; 1.47] 100.0%
	.,		-1.	5 -1 -0.5 0 0.5 1 1.5		

#### Potassium

	Severe	Non-seve	·e	Standardised Mean			
Study	Mean SD	Total Mean S	D Total	Difference	SMD	95%-CI	Weight
Feng,Y	4.00 0.6667	70 3.90 0.370	4 352	į <del>                                      </del>	0.23 [	-0.03; 0.49]	34.2%
Wan,S	3.80 0.5926	40 4.00 0.592	95 –		-0.34 [	-0.71; 0.04]	27.9%
Guan,W	3.80 0.4444	138 3.90 0.444	4 614	- <del></del>	-0.22 [-	-0.41; -0.04]	37.9%
Random effects model Heterogeneity: $I^2 = 79\%$ , $\tau$		<b>248</b> .01	1061		-0.10 [	-0.43; 0.23]	100.0%
			_	0.6-0.4-0.2 0 0.2 0.4 0.6			

#### Sodium



#### γ-GT

Study	Severe Mean SD	Non-severe Total Mean SD	e ) Total	Standardised Mean Difference	SMD	95%-CI Weight
Cai,Qi Cai,Q	92.00 80.0000 35.25 22.5185			-		[0.84; 1.36] 56.0% [0.64; 1.23] 44.0%
Random effects mode Heterogeneity: $l^2 = 0\%$ , $\tau^2$	-	143	473	-1 -0.5 0 0.5 1	- 1.03	[0.83; 1.22] 100.0%

# Meta-analysis of Blood clothing biomarkers

#### Prothrombin time

Study	Severe Non-severe Mean SD Total Mean SD	Standardised Mean Total Difference	SMD 95%-CI Weight
Wan,S Wang,D Han,H	11.30 0.8148 40 10.80 0.6667 13.20 1.6296 36 12.90 0.8148 12.65 1.1300 35 12.20 0.8800	95 102 49	- 0.70 [0.32; 1.08] 36.1% 0.28 [-0.11; 0.66] 35.7% 0.45 [0.01; 0.89] 28.1%
Random effects mode Heterogeneity: $I^2 = 16\%$ ,		-1 -0.5 0 0.5 1	0.48 [ 0.23; 0.73] 100.0%

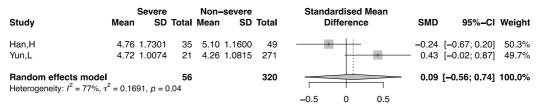
#### D-dimer

Study	Mean	Severe SD	Total	No Mean	n-severe SD	Total	Standardised Mean Difference	SMD	95%-CI Weight
Feng,Y Cai,Q Wan,S Wang,D Han,H Mao,L Yun,L	1.11 0.56 0.60 414.00 19.11 0.90 1.00	2.5852 0.4222 0.5185 839.2593 35.4800 14.7407 6.0815	70 58 40 36 35 88 21	0.51 0.36 0.30 166.00 2.14 0.40 0.41	0.5630 0.2000 0.2222 136.2963 2.8800 6.2963 0.3037	352 240 95 102 49 126 271			[ 0.25; 0.77] 16.9% [ 0.48; 1.07] 15.9% [ 0.50; 1.27] 13.5% [ 0.17; 0.94] 13.4% [ 0.28; 1.18] 11.9% [ -0.23; 0.32] 16.5% [ -0.08; 0.81] 12.0%
Random effects mod Heterogeneity: $I^2 = 69\%$		4, <i>p</i> < 0.01	348			1235	-1 -0.5 0 0.5 1	0.54	[ 0.31; 0.77] 100.0%

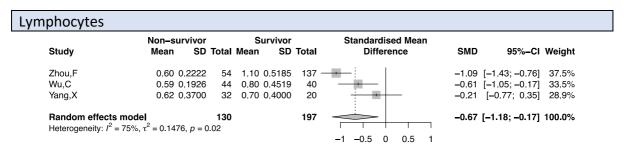
#### Activated partial thromboplastin

Study	Severe Mean SD		Total	Standardised Mean Difference	SMD	95%-CI Weight
Wan,S Huang,C Wang,D Han,H	29.70 12.4296 29.53 3.4800 30.40 4.0741 29.53 3.4800	53 27.70 6.8889 36 31.70 2.8889	28 102 -	* *	- 0.37 [- -0.40 [-	0.05; 0.80] 26.3% -0.09; 0.83] 23.5% 0.78; -0.02] 26.0% -0.12; 0.75] 24.3%
Random effects mode Heterogeneity: $I^2 = 74\%$ ,		<b>164</b> .01	274	-0.5 0 0.5	0.17 [–	0.23; 0.57] 100.0%

#### Fibrinogen



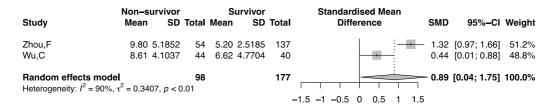
Meta-analysis of studies reporting survivor and non-survivors with mean of biomarkers



#### CD3+ T

	Se	vere	No	n-severe		Standardised Mean		
Study	Mean	SD Total	Mean	SD	Total	Difference	SMD	95%-CI Weight
Qin,C	461.60 264.7	7000 286	663.80	291.3000	166	-	-0.73	[-0.93; -0.54] 83.9%
Yun,L	421.00 311.8	3519 21	776.00	369.0370	271 -	*	-0.97	[-1.42; -0.52] 16.1%
Random effects mod Heterogeneity: $I^2 = 0\%$ ,		307			437		-0.77	[-0.95; -0.59] 100.0%
	·					<b>-1 -</b> 0.5 0 0.5 1		

#### White blood cells



#### Interleukin-6

	Non-survivor	:	Survivor	Standardised Mean		
Study	Mean SD	Total Mear	n SD Tot	al Difference	SMD	95%-CI Weight
Zhou,F Wu,C	11.00 5.1111 10.07 5.5111	54 6.30 44 6.09		0 -		[1.09; 1.78] 55.2% [0.52; 1.42] 44.8%
Random effects mode Heterogeneity: $I^2 = 61\%$ ,		<b>98</b> .11	17	-1.5 -1 -0.5 0 0.5 1 1	<b>- 1.23</b> 1.5	[0.77; 1.68] 100.0%

## TP

	Non-survivor	Survivor		Standardised Mean			
Study	Mean SD	Total Mean SD	Total	Difference	SMD	95%-CI Weight	
Zhou,F	12.10 1.8519	54 11 40 1 6296	128		0.41	[ 0.09; 0.73] 39.2%	
Wu,C	11.60 1.0000	44 11.75 1.1111	40	<del></del>	-0.14	[-0.57; 0.29] 33.8%	
Yang,X	12.90 2.9000	32 10.90 2.7000	20	-	- 0.70	[0.12; 1.27] 27.0%	
Random effects mode	el	130	188		0.30	[-0.14; 0.75] 100.0%	
Heterogeneity: $I^2 = 68\%$ ,	$\tau^2 = 0.1042, p = 0$	0.04					
				-1 -0.5 0 0.5 1			

#### Total bilirubin

Study	Non-survivor Mean SD	Survivor Total Mean SD	Total	Standardised Mean Difference	SMD 95%-CI Weight
Wu,C Yang,X	14.50 7.0000 19.50 11.6000	44 11.65 4.3111 32 13.10 4.3000	40 20	-	0.48 [0.05; 0.92] 63.6% - 0.66 [0.09; 1.24] 36.4%
Random effects mode Heterogeneity: $I^2 = 0\%$ , $\tau^2$	-	76	60	-1 -0.5 0 0.5 1	0.55 [0.20; 0.89] 100.0%

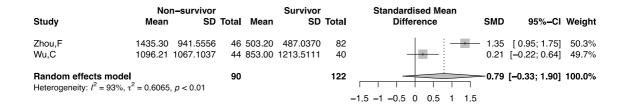
#### Creatinemia

Study	Non–survivor Mean SD	Survivor Total Mean SD	Standardised Mean Total Difference	SMD 95%-CI Weight
Wu,C Yang,X	73.00 21.6667 80.70 32.3000	44 78.65 24.8667 32 76.30 27.4000	40 20	-0.24 [-0.67; 0.19] 61.4% - 0.14 [-0.42; 0.70] 38.6%
Random effects mode Heterogeneity: $I^2 = 12\%$ ,		<b>76</b> 29	-0.6-0.4-0.2 0 0.2 0.4 0.6	-0.09 [-0.46; 0.27] 100.0%

#### LDH

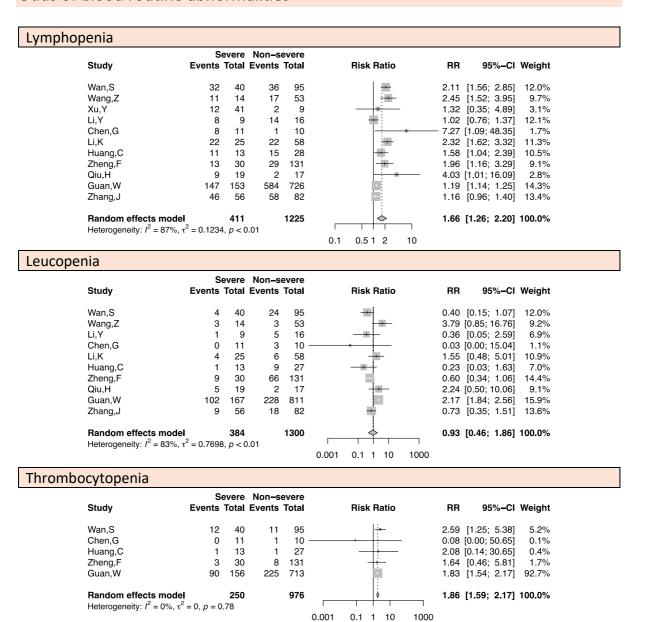
	Non-survivor	•	Survivor	Standardised Mean		
Study	Mean SD	Total Mean	SD Total	Difference	SMD	95%-CI Weight
Zhou,F	521.00 226.6667	54 253.50	73.3333 130	-	- 1.94	[1.57; 2.32] 51.0%
Wu,C	484.00 161.1111	44 349.50	90.7407 40	-	1.01	[0.55; 1.46] 49.0%
Random effects mode Heterogeneity: $I^2 = 90\%$ , 1		98	170		<del>-</del> 1.48	[0.57; 2.40] 100.0%
				_2 _1 0 1 2		

#### Ferritin

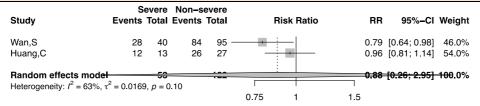


# II. Forest plot of studies reporting proportion of participants with each biomarker's abnormalities

#### Odds of blood routine abnormalities



## Thrombocytosis



# Odds of inflammatory biomarkers abnormalities

#### Eleveted procalcitonin

	Se	evere	Non-se	evere							
Study	Events	Total	Events	Total		Ris	k Ratio		RR	95% <b>-</b> CI	Weight
Wan,S	19	40	6	95			-		7.52	[3.25; 17.42]	9.5%
Wang,Z	0	12	4	50			+		0.10	[0.00; 51.87]	0.2%
Chen,G	4	10	1	8			++-		3.20	[0.44; 23.28]	2.1%
Li,K	21	25	23	58			-		2.12	[1.48; 3.04]	24.1%
Huang,C	6	12	6	27			-		2.25	[0.91; 5.56]	8.5%
Qiu,H	5	19	1	17					4.47	[0.58; 34.57]	2.0%
Guan,W	16	117	19	516			<u> </u>		3.71	[1.97; 7.00]	13.9%
Zhang,J	25	50	16	68			-		2.12	[1.28; 3.54]	17.9%
Wang,D	27	36	22	102			+		3.48	[2.30; 5.27]	21.7%
Random effects mode		321		941			<b>♦</b>		2.94	[2.09; 4.15]	100.0%
Heterogeneity: $I^2 = 35\%$ ,	$\tau^2 = 0.0629$	p = 0	1.14								
					0.001	0.1	1 10	1000			

#### **Eleveted CRP**

	S	evere	Non-se	evere							
Study	Events	Total	Events	Total		Risk Ratio		RR	9	5%-CI	Weight
Wang,Z	11	14	31	51		Ė		1.29	[0.91:	1.841	12.3%
Xu,Y	24	41	2	9		<del>[.</del>		2.63	[0.76;	9.19]	1.9%
Li,Y	7	9	9	16		<del> </del>		1.38	[0.79;	2.41]	7.2%
Li,K	23	25	27	58		+		1.98	[1.47;	2.67]	14.1%
Zheng,F	30	30	91	131				1.44	[1.28;	1.61]	21.2%
Qiu,H	1	19	0	17				9.85	[0.02; 61	72.53]	0.1%
Guan,W	110	135	371	658				1.45	[1.30;	1.60]	21.5%
Zhang,J	53	55	72	81				1.08	[0.99;	1.19]	21.8%
Random effects model		328		1021		<b> </b>		1.41	[1.17;	1.70]	100.0%
Heterogeneity: $I^2 = 81\%$ , 1	$z^2 = 0.0361$	p < 0	).01		'	1 1 1	1				
					0.001	0.1 1 10	1000				

#### **Eleveted ESR**

	Se	evere	Non-se	evere			
Study	Events	Total	Events	Total	Risk Ratio	RR	95%-CI Weight
Wang,Z	12	13	18	45	-		[1.56; 3.41] 90.1%
Li,Y	5	9	3	16	+ :-	- 2.96	[0.91; 9.60] 9.9%
Qiu,H	0	19	0	17			0.0%
Random effects model Heterogeneity: $I^2 = 0\%$ , $\tau^2 = 0\%$		<b>41</b> .67		78		2.37	[0.91; 6.12] 100.0%
					0.2 0.5 1 2 5		

# Odds of blood clothing abnormalities

#### Eleveted D-dimer

	s	evere	Non-s	evere				
Study	Events	Total	Events	Total	Risk Ratio	RR	95%-CI	Weight
Li,Y	5	9	6	16	+	1.48	[0.63; 3.51]	8.1%
Guan,W	65	109	195	451	<del></del>	1.38	[1.14; 1.66]	73.5%
Zhang,J	23	38	12	43	-	- 2.17	[1.26; 3.74]	18.4%
Random effects model Heterogeneity: $I^2 = 18\%$ , $\tau'$	<sup>2</sup> = 0.0137	<b>156</b> 7, p = 0	0.30	510		1.51	[0.89; 2.56]	100.0%
- •					0.5 1 2			

# Odss of biochemical abnormalities

# Eleveted LDH

	S	evere	Non-se	evere				
Study	Events	Total	Events	Total	Risk Ratio	RR	95% <b>-</b> CI	Weight
Wan,S	30	40	28	95	<del>  =</del>	2.54	[1.78; 3.64]	18.0%
Wang,Z	10	12	15	49	-	2.72	[1.66; 4.45]	14.0%
Li,Y	6	9	8	16	<del> = :</del>	1.33	[0.68; 2.61]	9.9%
Chen,G	10	11	1	10		- 9.09	[1.40; 58.91]	1.9%
Huang,C	12	13	17	27	<del></del>	1.47	[1.05; 2.04]	19.0%
Zheng,F	15	30	23	131	<del>                                    </del>	2.85	[1.70; 4.77]	13.4%
Guan,W	72	124	205	571	-	1.62	[1.34; 1.95]	23.7%
Random effects model		239		899		2.03	[1.42; 2.90]	100.0%
Heterogeneity: $I^2 = 63\%$ , $\tau$	$^2 = 0.0694$	P, p = 0	0.01					
					0.1 0.5 1 2 10			

# Eleveted ALAT

Study	So Events	evere Total			Risk Ratio	RR	95%-Cl Weight
Cai,Qi Wang,Z Zheng,F Qiu,H Guan,W	70 6 5 0 38	85 14 30 19 135	117 17 8 2 120	233 55 131 17 606	+	1.39 2.73 0.04	[1.40; 1.93] 74.7% [0.67; 2.86] 3.7% [0.96; 7.76] 1.8% [0.00; 23.45] 0.0% [1.04; 1.94] 19.8%
Random effects model Heterogeneity: $I^2 = 0\%$ , $\tau^2$		<b>283</b> .51		1042	0.001 0.1 1 10 1000	1.60	[1.34; 1.90] 100.0%

# Eleveted ASAT

	Se	evere	Non-s	evere				
Study	Events	Total	Events	Total	Risk Ratio	RR	95%-CI	Weight
Cai,Qi	64	85	86	233	+	2.04	[1.66; 2.51]	38.7%
Wan,S	15	40	15		<u>.</u>	2.38		9.4%
Wang,Z	7	14	12	55	<del>  i-</del>	2.29	[1.11; 4.73]	7.0%
Chen,G	5	11	0	10		46.41	[0.09; 22868.79]	0.1%
Huang,C	8	13	7	28	<del>- i-</del>	2.46	[1.14; 5.33]	6.3%
Zheng,F	12	30	10	131	-	5.24	[2.50; 10.98]	6.8%
Qiu,H	1	19	2	17	<del>  -</del>	0.45	[0.04; 4.50]	0.8%
Guan,W	56	142	112	615	+	2.17	[1.66; 2.82]	31.0%
Random effects model		354		1184	<b>*</b>	2.27	[1.76; 2.94]	100.0%
Heterogeneity: $I^2 = 21\%$ , 1	r <sup>-</sup> = 0.0167	p = 0	.26		1 1 1 1	1		
					0.001 0.1 1 10	1000		

# Eleveted CK

	Se	evere	Non-se	vere							
Study	Events	Total	Events	Total		Risk	Ratio		RR	95%-0	l Weight
Wan,S	7	40	3	95			<del></del>		5.54	[1.51; 20.36	6] 13.5%
Huang,C	6	13	7	27			-		1.78	[0.75; 4.24	1] 22.1%
Zheng,F	9	30	8	131			÷+-		4.91	[2.07; 11.68	3] 22.1%
Qiu,H	1	19	0	17		-	<del>                                     </del>		9.85	[0.02; 6172.53	3] 0.8%
Guan,W	23	121	67	536			+		1.52	[0.99; 2.34	1] 35.7%
Zhang,J	3	25	1	35		-	-		4.20	[0.46; 38.06	5.8%
Random effects model		248		841			÷		2.61	[1.35; 5.05	i] 100.0%
Heterogeneity: $I^2 = 43\%$ , $\tau$	$x^2 = 0.1896$	p = 0	).12								
					0.001	0.1	1 10	1000			

# Eleveted Creatininemia

	S	evere	Non-s	evere			
Study	Events	Total	Events	Total	Risk Ratio	RR	95%-CI Weight
Wan,S	3	40	3	95	<del>-  •:</del>	2.38	[0.50; 11.27] 30.6%
Zheng,F	1	30	1	131		- 4.37	[0.28; 67.85] 9.9%
Qiu,H	0	19	0	17			0.0%
Guan,W	6	138	6	614		4.45	[1.46; 13.59] 59.5%
Random effects model Heterogeneity: $I^2 = 0\%$ , $\tau^2$		<b>227</b> .81		857		3.66	[1.53; 8.81] 100.0%
<b>3 3</b> , .					0.1 0.51 2 10		

# Eleveted totla bilirubin

Study			Non-s Events			Ris	k Ra	tio		RR	95% <b>-</b> CI	Weight
Zheng,F Guan,W	3 17	30 128	6 59	131 594		_	+	-			[0.58; 8.24] [0.81; 2.21]	
Random effects model Heterogeneity: $I^2 = 0\%$ , $\tau^2$		<b>158</b> .50		725	0.2	0.5	1	2	5	<del>1</del> .42	[0.18; 11.26]	100.0%